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WILLIAM KEITH BROOKS

1848-1908

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JOHNS HOPKINS
UNIVERSITY CIRCULAR

New Series, 1909, No. 1 . JANUARY, 1909 Whole Number, 212

IN MEMORIAM
WILLIAM KEITH BROOKS
1848-1908

A meeting commemorative of Dr. William Keith Brooks, Henry Walters Professor of Zoology in this University, who died November 12, 1908, was held in the Donovan Room, McCoy Hall, Sunday afternoon, December 6, at 4 o'clock. President Remsen presided and spoke of Dr. Brooks's early connection with the University and of his career as an investigator, a teacher, a colleague, and a man. Addresses were delivered by Professor B. L. Gildersleeve, Dr. H. M. Hurd, Professor W. H. Howell, Professor E. A. Andrews, and Dr. Caswell Grave, and they are printed in the following pages.

Professor Gildersleeve

As one of those who knew Dr. Brooks longest, I have been requested to say a few words about the rare man, the chosen spirit, whose presence was a light to this University, whose work will abide forever as a precious possession; and it is all ours, for this was his intellectual and spiritual home. But, after listening to President Remsen's analysis of his varied activity, and to Dr. Hurd's vivid description of the man as he lived and moved, I realize my utter incompetence to deal with so complex a subject, and the feeling returns that first came to expression upon the announcement of his death, the vain regret that, although we had lived and worked so long within the same academic walls, I had not known him better. It is the same feeling that comes over one when one thinks of all the music that might have lifted the soul to higher regions and yet has died unheard. But Dr. Brooks had fixed his residence far from the haunts of most of us, and, in any case, it is a sad fact that only a few in this body of seekers after truth ever come into close personal contact. In the rush of the life that we must lead if we are to be faithful, we only get glimpses of what is going forward in the minds and hearts of our colleagues. We are like trains moving on parallel tracks. We catch sight of some face, some form that appeals to us, and it is gone. Yet, in the measure of my understanding, there was no one of our number that I admired more than I did Dr. Brooks.

The very first lecture I heard him deliver, when he came here a young man, revealed to me at once his uncompromising demand of scientific evidence and his marvellous power of generalization. His popular talks, simple in their form as simple could be, opened vistas of startling significance to those who had learned to think at all. His thoughts did not so much wander through eternity as explore eternity with a measuring-rod. To outsiders like

myself who were not familiar with the patient processes of his scientific research, the word "genius" served to explain everything. He seemed to us as one of those rarely-gifted beings, in whom child-like sensitiveness is paired with immediate insight, nay, is one with it. And, if those who had not the specialist's knowledge of his sphere of work attributed too much to intuition, because he saw so much of creation's handiwork that we did not see; still there has never been a great scientific genius without vision; and so it came about that in the solemn hour of his obsequies I thought not so much of the toilsome path by which he had reached the mount of vision, as of the wonderful verse that tells of the angels of the children, for in some things his intimates said he was as a child, and of that other wonderful verse about the open face with which are beheld the great secrets of the universe. No one can grapple with the great problems that he has set forth in his scientific system and fail to recognize in him a profound thinker. No one that ever came into personal relations with him can have failed to take knowledge of his pure and lofty and kindly spirit, and so I, too, have felt the touch of his master mind and have divined the essential sweetness of his noble nature. I am not a stranger to the grief that reigns in this gathering of his associates, his pupils, his friends, and I am grateful for the privilege that has been accorded me of adding to the wealth of these memorial services my poor tribute of admiration and affection.

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Dr. Henry M. Hurd

It has seemed to me proper to speak of the personal side of Professor Brooks's character. Others can better estimate his scientific work, and I would ask your indulgence when I present some details of a personal character. Many others here, in fact, have known him much longer than I, and all are much better fitted to do justice to his special attainments. I made his acquaintance soon after I came to Baltimore, about eighteen years ago, and I have wondered ever since how it came about, he being one of the most retiring of men and we two not being thrown together in our work. I am sure, however, that he made the first advances out of pure kindness of heart to me, a stranger in a new field of work, and our relations for many reasons became intimate. I learned to know him best when, some time afterwards, at a Commencement time, when his family had left the city, he came to reside with me for a week or two. He was busy with his drawings and I was amazed at his method of working and the amount which he accomplished. At times he rose at dawn and worked with little interruption until late in the day. At other times he would work for a few hours, then lie down for an hour's rest without removing his clothing, and afterwards, upon awaking, renew his work, to lie down again when exhausted. This habit of continuous, yet interrupted, work I think must have been due to his congenital heart trouble, which did not permit of too long periods of work without what may be termed a resting stage. Generally, after an evening's work he came from his room, and for an hour or more he would converse in a most graphic and illuminating way upon the topics which were uppermost in his mind. He told me of his new studies in morphology and his views as to the future of the cultivation of the oyster. He gave vivid descriptions of his work in Nassau, Jamaica, and the West

Indies. He described the skulls and linguistic remains of the Lucayan Indians, or spoke of his animal pets and his love for them. He had the rare faculty of conveying scientific knowledge in simple language and could interest all who heard him. He seemed to have given careful, deliberate thought to every subject which came up for discussion. I remember that he had very decided views as to education, and he spoke of his desire to organize classes in nature study long before it became a fad in elementary schools. I also never forgot his views as to the training of animals, which I afterwards saw carried out at his own home in a very practical manner. His kindness to animals, especially parrots and dogs, and his consideration for them were remarkable. He never allowed them to be punished, and had theories that bad temper, bad habits, and even ferocity on their part grew out of inconsiderate treatment. If a dog killed a chicken, he had the dead chicken hung about the puppy's neck until it became offensive to him as well as to others. If a young dog gnawed a book or a shoe, he had the mutilated articles similarly dealt with. He believed that all animals should be reasoned with and told of their faults with quietness and composure. The result was a wonderful degree of sympathy between him and his pets. The same was true of his flowers. They were his companions, his joy, and his pride. In his eyes no one could have a higher pleasure than to go through his hot house to inspect his beloved plants.

His was a complex character of strength and simplicity. His views as to matters essential were philosophical and statesmanlike in their breadth and to him seemed axiomatic, and he held them tenaciously and could not depart from them. He could, on occasion, as in his plea for the preservation and study of the oyster, stand inflexibly for them for twenty years and never think of change or even of compromise, for they were founded upon careful observation, sound study, and impregnable deductions. He

uttered them and reiterated them year after year, until at last he found them accepted even by the tardy legislators of Maryland. The same was equally apparent in his contention that the Chesapeake Bay should not receive the sewage of Baltimore until it had been rendered innocuous by sedimentation and bacterial decomposition. He stood alone for a time in this view, but the city of Baltimore eventually accepted it and is now acting upon it. His very strength gave him an appearance of simplicity. He acted in all matters with the directness and simplicity of a child. These very qualities gave him at times an appearance of helplessness. One felt instinctively that he must be guarded and helped and protected and shielded from the consequences of his own apparent lack of worldly wisdom, forgetting after all that his was the truest wisdom. His mind was attuned to the verities of science, and he listened to the internal voice and not to the voice of the people. He rejoiced in the opportunity to publish his book, "The Oyster," because, in rewriting and publishing it, he received a promise from the University that his monograph on "Salpa" should be worthily published—a book which he believed to be far more important. He had wonderful powers of observation and was quick to see the bearing of any isolated fact. I remember on one occasion he noticed a flock of Mother Carey's chickens upon Lake Roland, near his residence in the country. He immediately telephoned to two members of his family, who had left his house a few minutes before to go to Old Point, not to make the journey, as a severe storm was impending, and his invalid wife was thereby saved a severe and trying experience upon Chesapeake Bay that night, when a fearful storm raged with much destruction of shipping. He knew from his previous experience that when Mother Carey's chickens sought an inland water, the fact presaged a storm of no common severity.

He had a beautiful home life. His devotion to his wife, long an invalid and very helpless, was most touching, and

his tenderness to all who belonged to his household was a marked characteristic. He was fond of his neighbors and friends, devoted to his pupils, and helpful to his students. Even his servants were members of his family, and no one mourned over his death more sincerely than his faithful man-servant.

It was evident when death came that the machinery of his organization was completely worn out. It is rare that one with such a congenital heart defect grows to manhood. It is, indeed, wonderful that he should have completed more than sixty years of fruitful activity. This must have been due to his knowledge of his limitations and his intuitions as to the best method of utilizing his energies. His last year of life was one of intense suffering and weariness, notwithstanding the ceaseless devotion of his family to his comfort. It is a relief to think of him at last at rest.

His theory of life was simple and evolved from true wisdom. He did those things which he was fitted to do and which he enjoyed doing, and his mind was full of content, because he did not attempt more. Many of us are bound to the iron wheel of necessity, duty, or responsibility, and revolve helplessly with it and not according to our own volition. We spend our lives in routine servitude, always anticipating and never securing the freedom to live our own lives and think our own thoughts which we desire. Our departed friend was peculiarly happy in that he lived his true life and developed in accordance with his special gifts. He has left an example for our imitation and the record of a life devoted to science. "To learn what is true in order to do what is right," was its guiding motto.

Professor Howell

Just twenty-nine years ago, as an undergraduate student, I first made the acquaintance of Dr. Brooks. Since that time it has been my privilege to be brought close to him in many ways, as a student, a colleague, and a friend. The great respect and esteem which I soon learned to feel toward him as a teacher, has deepened into a lasting admiration and affection, as I have learned to appreciate his unique character and his great intellectual qualities. His death has occasioned, I believe, an unusual feeling of sadness among his old students, partly because of the affectionate regard in which he was held, and partly, perhaps, because it was recognized by most of us that physically he was not a robust man, and that in the accidents of life he was liable to be stricken down at any moment. The very concern that this thought occasioned has served to intensify our sorrow for his death. It is as though our worst fears had been realized all too soon.

In speaking of him before this company of friends it is not necessary to refer to his personal qualities. We all recognized him as a man different from others, a man with peculiarities, yes, oddities of manner, which set him apart from the average conventional individual; but we all know that his peculiarities were of that lovable and gentle sort which arise essentially from the absence of what we may call worldliness, and which therefore serve only to call forth a greater response of kindly and protective affection from all generous hearts. Indeed, I have always fancied that I could detect in the attitude of Dr. Brooks's students toward him a certain kind of chivalrous relationship, a pact, as it were, founded upon principles different from those which usually control the conflict of selfish interests in the intercourse of men. They sat at his feet, intellectually speaking, and they regarded him without question as their master, but in

things material they believed that, if the necessity should arise, it was their part to guard and protect his unsuspicious and gentle nature from possible injustice. They have always shown an especial willingness or eagerness to proclaim his great work, because, I believe, they felt that he himself was liable to ignore completely and unconsciously all the various devices, legitimate and illegitimate, of self-exploitation.

The simplicity and purity of Dr. Brooks's character found an especially favorable environment in the quiet of academic life. While these qualities may not have been wholly recognized or appreciated by those who knew him slightly, or by those who value only the militant virtues, yet in the intimacy of the laboratory life they appealed strongly to his better students, and formed, I have no doubt, a considerable part of the uplifting influence which he exerted upon the character and work of his men.

As a teacher Dr. Brooks had a remarkable gift for exposition. His method was peculiar and unusual, but very attractive and effective. In lecturing he used no notes of any description, and certainly nothing that savored of the oratorical manner, but the clearness, the orderliness, and the attractiveness with which he could present a subject was really unrivalled, so far as my experience goes. He seemed to have such a complete control of his mental processes, he thought so well and so clearly and expressed his thoughts in such appropriate language, that every student with a spark of interest in the subject was delighted; it was a treat to hear him lecture.

I remember that, while serving on the faculty of the University of Michigan, I came to know very well some of the Hopkins men who were in the departments of ancient and modern languages. In recalling their student days at the Hopkins one of their pleasantest memories seemed to be the talks that Brooks gave before the scientific association of the University. It would appear that, when it

was known that Brooks was to give a paper, it was a custom for men in all the graduate departments to attend the meeting, so much did they appreciate the charm and clearness with which he could present the problems of his subject. I recall also that one of my colleagues in the medical department dates his determination to enter upon a biological career from a lecture that was given by Dr. Brooks. To him that lecture had the seductiveness of the music of the piper of Hamelin—it made him see the blue waters and smell the salt air of the ocean.

In many ways it seemed to me a great pity that, in the organization of the courses in the biological department, Dr. Brooks was not brought more into contact with the beginning students; his talents for exposition and his great breadth of scientific vision would have had such a stimulating and elevating influence. Doubtless this kind of work was in the nature of the case more or less impossible for him: his more serious mission was, of course, with his special students, and the necessity that he was under of leading a restrained and quiet life from a physical standpoint limited greatly the extent of his active work in teaching.

Upon his advanced students Dr. Brooks exercised without doubt a strong and enduring influence, which they hasten to acknowledge gratefully on every occasion. The means by which he exerted this influence I do not feel capable of analyzing satisfactorily. He paid very little attention to his men in their daily work, and difficulties of technique interested him perhaps not at all. I feel quite sure that, in many cases, the routine work for the Ph. D. degree was accomplished with but little direct supervision on his part. Yet, so far as I know, none of the numerous men who were trained in his laboratory and who now occupy important chairs in the subject in other colleges, fail to attribute to him a great influence for good upon their intellectual development. I assume that this influence was due in part to the simple truthfulness of his

character and his intellectual sincerity. Indeed, the biological students of the days that I am recalling were very fortunate in having two such teachers as Martin and Brooks: these men had, or rather I should say they lived, such high ideals that unconsciously their pupils imbibed from them a distaste for petty and selfish methods. But Brooks's particular influence was due chiefly, I imagine, to the fact that all of us recognized in him a certain independence and profundity of thought. He was interested in the large problems of biology. Concerning these problems he thought continually and deeply and along lines of his own. Those who were brought into close association with him as students, appreciated this fact and at once accepted him as an intellectual guide and master. Matters of laboratory technique they might have to acquire from other sources, but from him they obtained the stimulus to real thinking. As an undergraduate student I was thrown into somewhat intimate relations with the graduates in the biological department. I recall that, although some of them differed but little in age and in amount of training from Brooks, yet without exception they regarded him as an older and wiser man, and paid that deference to his attainments which all subsequent generations of his students have been glad to acknowledge.

For all the former students of the biological laboratory the death of Dr. Brooks will mark the end of a definite era in the history of the department. The work of this laboratory will go forward, I have no doubt, under new hands with as great success as in former years, but it is a sad thing to realize that the period of Martin and Brooks has gone by, that a definite chapter in the history of this laboratory has been completed beyond revision. The old students look back upon this finished work with pride; they can wish no greater prosperity to the biological department than to hope that the influence of these two great and beloved teachers may be perpetuated here forever. The methods that they used, the problems that

interested them may be supplanted by others of more modern type, for in biology, as in the other sciences, the points of view change rapidly, and senescence as regards theories and modes of thought is a process that comes on with remarkable rapidity. But the spirit and ideals which Brooks and Martin inculcated and exemplified cannot be improved upon, and I hope that they will ever characterize the work of this laboratory.

Professor E. A. Andrews

As the one of Professor Brooks's students who has longest remained closely connected with him, as student, assistant, and associate, and as one who has owed peculiarly much to his helpful kindness, I feel unable here to express my full debt of gratitude to so pure a friend.

Coming with the traditions of a Yale student to the Johns Hopkins University, some twenty years ago, and knowing the fame of Professor Martin's books, I was surprised to find in him a man young in years, and in Dr. Brooks one old in thought. At that period Brooks appeared to the new student a sphinx-like character, with long, bushy beard, and ever in company of a huge St. Bernard dog that followed him to the laboratory.

It was then that Professor Brooks was making such good use of the opportunities offered by the new university in the founding of the Chesapeake Marine Laboratory, which first realized the dreams of Louis Agassiz, with whom, at Penikese, Brooks had studied. At Crisfield, Hampton, Fort Wool, Beaufort, and later in the Bahamas and in Jamaica, the work of Brooks and his men played no small part in the advance of scientific zoology. And happy are they who now, from universities throughout the land, look back upon those days of stimulating contact with Nature and her loving admirer and interpreter, their master, William Keith Brooks.

But time presses and I must limit my remarks to a brief mention of a few of the published writings of Professor Brooks, the zoologist. Leaving the practical aspect of his work aside, as that has been recalled by one most fitted to do it justice, the work of Professor Brooks was of so fundamental a nature that it can scarcely be dealt with without serious study. Born ten years after Darwin first put on paper his theory of evolution by natural selection, and ten years before that theory was published, Dr. Brooks was naturally most deeply affected by the great wave of acceptance of natural selection as the means of evolution.

His first book, "Heredity," printed after ten years of thought and discussion, was an ingenious attempt to reconcile Darwin's subsidiary hypothesis of "pangenesis" with the conflicting facts of Galton. It is a book full of new points of view and novel thought, and, though the author was led by discovery of later facts to abandon the applications there made, the book will remain as an important stage in the growth of our thought upon the means of evolution.

As an illustration of the long-continued interest in problems and the tenacity of purpose which were characteristic of the mind of Professor Brooks, may be selected a brief mention of his study of those little-known, but beautiful, marine animals, the Salpas. First, in 1875, in the laboratory of Alexander Agassiz, Dr. Brooks discovered that the remarkable phenomenon of "alternation of generations," discovered in these salpas by the poet-naturalist Chamisso, in 1814, did not really exist there at all. While the point here involved may be difficult to express without too technical treatment, it was this. Professor Brooks discovered that the animals supposed to make the eggs did not do so, but merely took care of the eggs that were put into them full-formed. He simply said the producers of eggs must be females. Granting the facts the conclusion seems evident, though investigators of

salpas are still of different minds. This discovery was but one in a long series of difficult observations upon the anatomy and embryology of the salpas, that occupied Professor Brooks for twenty years and more. In fact, the publication in 1893 of his great quarto monograph of 400 pages and 50 plates did not end his interest in these salpas. It was a source of deep regret to him that his plan to write the manuscript of a last investigation of salpa, for which he had completed a long series of illustrations, could not be carried out this past summer.

Professor Brooks's work was at the seaside and upon the ocean, on the eggs and young of marine animals, for they seemed to offer solutions of the fundamental problems of morphology. In brief, his task was the testing of the theory of evolution by the study of lower animals. Over and beyond the accumulated facts that will remain interwoven in the fabric of human knowledge, there was in all that he did the spirit of genius in point of view and interpretation. His philosophical bent and his love for Nature were the prime motives for his labors.

His last book, "The Foundations of Zoology," contains many of his long-matured thoughts and will stand as his chief monument. The viewpoint there taken seems a difficult one; but it is characteristically balanced, profoundly philosophical, and full of reservation of judgment where human experience fails to supply facts.

For text-book making Professor Brooks had little zest, yet his "Manual of Invertebrate Zoology" was a quite new conception and has no peer nor successor.

Tradition has it that, in the inception of this university, there was a hope that Professor Huxley might hold the chair of Biology. What different history that would have made! But is it not true that, in the life-work of William Keith Brooks, the Johns Hopkins University had the services of a mind even superior to that of Thomas Huxley?

Dr. Caswell Grave

The debt owed to Dr. Brooks by the State of Maryland for the studies made by him of her most valuable resource, the oyster of the Chesapeake, for his long-continued efforts to create a proper realization on the part of the State, as a whole, of the possibilities of this resource, and for his suggestions of methods for husbanding it, is recognized and appreciated by so few persons that I esteem it a great privilege to have the opportunity on this occasion to speak of the work of Dr. Brooks on the oyster and of its far-reaching importance and results.

After the publication of his book, "The Oyster," in 1891, Dr. Brooks's personal activity in the work of arousing interest in the oyster question ceased, but there were not lacking men, consciously or unconsciously inspired by Dr. Brooks, to take up the work. Such was the retiring disposition and modesty of Dr. Brooks that his name gradually ceased to be closely associated with the agitation of the question which went on. Some of the measures advocated by Dr. Brooks were entirely dropped, while others were modified in order that the time of their adoption by a hesitating public might be hastened. To give due credit to Dr. Brooks for his pioneering work in this field, it is not at all necessary to take from the credit of those who have borne the brunt of the fight in later years.

Dr. Brooks established the Chesapeake Marine Laboratory in 1878, at Fort Wool, Virginia, his purpose being to afford opportunities for the study of living marine animals for himself, his associates and students. It was at this time and place that Dr. Brooks began his study of the oyster, and so interested did he become in it that he was encouraged by the University to give his entire time to the subject during the following season, and to this end, in 1879, the Chesapeake Marine Laboratory was transferred to Crisfield, Maryland, this locality affording

the best opportunity at that time for the study of the oyster and the problems connected with it. In 1880 a paper entitled "Development of the American Oyster" was published by Dr. Brooks, embodying the results of his observations both at Fort Wool and at Crisfield. This paper was an important contribution to science, to philosophy, and to political economy. It contained a detailed and exhaustive account of the method of reproduction of the American oyster, the first ever published. Hitherto it had been taken for granted that the American oyster did not differ in this respect from the European species. In addition to the above, many observations concerning the anatomy of the oyster were described. The bearing which the recorded observations had upon philosophical questions then being discussed throughout the scientific world, were clearly set forth. The causes for the gradual decline of the oyster industry, which had then begun in Maryland and Virginia, were discussed and recommendations for legislation were made, based upon the results of his own study, the object of which was to place the industry upon a more satisfactory basis. This paper was well received everywhere, and gave to Dr. Brooks a prominent position among men of science, especially in Europe, a position which became permanent as a result of his later purely scientific papers. In recognition of the value of the contribution, the Société d'Acclimatation of Paris voted a medal to Dr. Brooks in 1883.

The discussion of the oyster problem within the State of Maryland, immediately following the publication of this paper and provoked mainly by it, created such an interest in the Chesapeake and its resources that the General Assembly of 1882 established a commission charged with the consideration and recommendation of ways and means to "Perpetuate the Oyster Beds of the Chesapeake." Dr. Brooks was appointed chairman of this commission by the Governor. Released from active

duties in the University, he gave his entire time for eighteen months to the study of the economic side of the oyster question. A laboratory for conducting experiments in the propagation of oysters was established at Hampton, Virginia. Surveys were made of the oyster bars in order to determine their actual condition. Careful studies were made of the oyster industries of European countries and Northern States, special emphasis being placed upon methods which have been employed elsewhere to bring exhausted or depleted oyster beds to a satisfactory state of productivity. Many of these methods were tried on a small scale in the Chesapeake. In 1884 the report of this work was published, in a quarto of 200 pages. In addition to descriptions of the above lines of investigation, it contained recommendations for legislation. Nearly all of the recommendations were disregarded by the Legislature, partly because of the effect of a minority report by the dissenting member of the commission, but mainly because the measures recommended were far in advance of the times.

Dr. Brooks saw clearly now that the oyster question was not an economic one to be worked out in a scientific way, but that it was a social problem, the solution of which could only result after long years of discussion before, and consequent education of, the general public. Such a campaign of education he undertook to carry on by frequent public lectures on the oyster, by discussions in the newspapers, and, finally and more effectually, by the publication, in 1891, of a popular treatise, entitled "The Oyster." This book is described by Dr. D. C. Gilman as "scientific enough to be accurate, not so scientific as to be hard of understanding." It marked a very long step in advance. Its immediate effect was to bring to the aid of the cause men of large influence in public affairs. The book, written so clearly, covering fully the subjects of oysters and oyster culture, was read with enthusiasm and profit in every State and country where oysters are

grown, and it continues still to be the best treatise on these subjects.

The pressure of public sentiment in favor of a correct and final solution of the oyster problem for Maryland, along substantially the lines suggested by Dr. Brooks, grew stronger and stronger, year by year, and in 1906 Dr. Brooks had the satisfaction of seeing the Haman Oyster Culture Law enacted. No one rejoiced more than Dr. Brooks when the State took this first step toward creating the conditions under which it may be possible, finally, to realize a part at least of the vision he had seen of the vast potential resources of the Chesapeake.

Professor William Hand Browne

Dr. Browne, who could not be present at the memorial meeting on account of the grave illness of a member of his family, has written the following appreciation of his close friend, Dr. Brooks:

I regret deeply that an imperative duty will prevent my attending the meeting to commemorate our departed colleague.

As Dr. Brooks and myself usually travelled to and from the city by the same train, we naturally had much talk together; and I was constantly struck by the wide extent of his information, and the clearness of his thought on every subject that arose. Were it an obscure passage in Shakespeare, a novel of Dickens or Thackeray, the Berkeleian philosophy, or an item in the morning paper, he had always something to the point, and often something illuminating, to say about it. Of many pregnant remarks which took hold of my memory, I will repeat but one. The subject of the supernatural having been broached, Dr. Brooks said: "The term 'supernatural' is due to a misconception of nature. Nature is everything that is."

An anecdote which he once told me of himself is characteristic of his way of thinking. When a boy—and, I suppose, a small boy—his teacher once asked him: "If the third of six be three, what will be the fourth of twenty?" Young Brooks answered, "Five." The teacher, thinking that he had not understood the question, repeated it. "I don't see," said the boy, "that altering the value of six alters the value of twenty."

Dr. Brooks was fastidious about the language of anything he wrote for publication, holding an obscure, pedantic, or clumsy style in abomination. He often discussed various forms of phrasing, and arrangement of clauses in a complex statement. Above all things he aimed at being perfectly lucid, and would read to me—taking me as representing the average mind—passages from his manuscripts, to see if I found them absolutely clear.

In losing Dr. Brooks, the University has lost one of its strongest and brightest minds, while I personally grieve at the loss of an endeared friend.

BIOGRAPHICAL SKETCH

PROFESSOR E. A. ANDREWS

[Reprinted from *"Science,"* December 4, 1908]

At sunrise November the twelfth there passed peacefully away, at his home "Brightside," on the shores of Lake Roland, one of the foremost of the few greatest of American zoologists.

William Keith Brooks was born March 25, 1848, in Cleveland, Ohio, though his ancestors for seven or eight generations lived in New England, coming to Massachusetts from England about 1634. He owed his early education in part to the excellent public school teachers of Cleveland, and in part to such elements of his boyhood's environment as his native bent led him to pick out and assimilate. Among such influences were collections of fossils, stored in a neighbor's barn, and the wonder of the flocks of carrier pigeons that still came over the lake to be destroyed by clubs and guns on the bluffs, darkening the air till school could no longer "keep."

More significant yet were the home-made aquaria, and the back-yard pond that was sometimes visited by a migrating carrier pigeon and more often the source of rare delight in the study of the habits of aquatic insects. And it was there that was learned an indelible lesson of the power of reflexes and mechanisms, by the observation of a dragonfly that had lost most of its machinery except that of the head, yet continued to chew and swallow food, which, like the water drunk by Munchausen's bisected horse, passed steadily out into the open void.

He was not given to athletic sports, though winning a prize for excellence in calisthenics. Contemplative and studious, he was sent by his father to Hobart College. After two years he entered Williams College where a love of natural history was fostered by the society that sent

out an expedition across South America, and he received the A. B. degree in 1870. At one time he tried life in his father's counting house. Here he exhibited characteristic interest in the solution of problems and distaste for such mechanical drudgery as had only practical and not theoretical ends in view, by the invention of a calculating machine to lessen the amount of unprofitable manual work.

To get university education despite lack of funds he became a teacher in De Veaux College, 1870-1873, where he profited by communion with nature as presented along the rapids below the falls of Niagara. There he entered upon a second marked period in necessary preparation for his life-work. He learned the boy mind and the simple way to teach by arousing interest in the truths of nature. Some others profited by this later when he was induced to give private lessons in natural history to boys in Newport, and the same bent always made his university lectures the opposite of that ill-digested verbiage that is sometimes heard. It was then that he became so strongly impressed by the writings of Bishop Berkeley as never to be oblivious of the relation of observational science to the fundamental character of the *ego*.

He was drawn by the fame of Agassiz to his first experience with marine life at the famous experiment, the Penikese school, where he shared the discomforts and delights of the beginnings of that hastily materialized ideal. Sailing to that island by fishing vessel the poetic strain in his composition long treasured the glimpse of his point of departure, the then picturesque hamlet of South Dartmouth, much later recognized, for its rare atmosphere, by the artist, Tryon.

At Harvard College, he received the degree of Ph. D., in 1875. He had the stimulus of contact and friendship with Hyatt and McCrady and the environment of the museums of Agassiz and of the Boston Natural History Society. With Hyatt's aid he added to his own studies of the

embryology of pond snails such intimate knowledge of the large collections of gasteropod shells that he could distinguish and identify them in the dark. Through McCrady he became inspired by the beauties of form and problems of life-history of the medusæ that McCrady's studies at Charleston were revealing.

In 1875, he, with Albert H. Tuttle and Theodore B. Comstock, opened a summer school in Cleveland, with some twenty-five, chiefly school teachers, in attendance, with lectures, excursions, and laboratory study of both local and marine animals and plants.

With the opening of the Johns Hopkins University, Dr. Brooks saw an opportunity to devote himself to the study of zoology untrammelled by tradition and with the freedom to express the genius that was in him. Appointed fellow, he was at once made instructor, and having no administration routine was enabled to give himself wholly to investigation—not that he was lacking in initiative and practical expedients. By personal representation he obtained from prominent citizens a nucleus of support for the founding of the Chesapeake Marine Laboratory, the first school for study of marine life to take the field opened by Agassiz's initial experiment. He also induced the civic authorities to open a public aquarium in Druid Hill Park, though this was subsequently abandoned, since the city had not then grown sufficiently mature to feel the need of such mild expression of intellectual interest and means of instruction.

His summer schools in the Chesapeake, at Crisfield, at the old fort on the Rip Raps off Old Point Comfort, and at Hampton, at first provided instruction for elementary students and school teachers as well as opportunity for research by naturalists, but later this latter side was the one exclusively developed. His study of the fauna of the Chesapeake soon made it evident that the fundamental problems of marine biology could be more profitably

attacked at some point on the ocean shore farther south, and it revealed also the hitherto unknown fact that the practical problems here in pressing need of solution could be solved by common-sense application of scientific principles.

Professor Brooks's discovery that the eggs of the American oyster could be fertilized outside the body suggested the development of an oyster industry along the lines in use by the fish-hatching stations, and led to the establishment of the Maryland Oyster Commission. As leading and working member of this body, Professor Brooks made an extensive survey of the oyster beds of Maryland and concluded that the State had there a vast means for development, which needed but the application of good business management to rescue it from its condition of neglect. From that date, 1882, Professor Brooks lived in the belief that the people of Maryland would utilize the great natural gifts of the Chesapeake by legislation that would remove the oyster industry from a mere hunt to the level of scientific agriculture. To this end he stimulated popular interest and sought to appeal to those of slow comprehension both by popular lectures and by his popular book, "The Oyster," which was issued in 1891 and reedited later. With characteristic persistence of purpose he was loath to let the truth be swamped by popular conservatism and ignorance, and became so determined to see the State enter upon the enjoyment of the fruits of his labors that the oyster question and its ultimate solution played no small part in keeping Professor Brooks in Baltimore, when alluring opportunities for enlarged activities were offered at a more northern university. However, he was temperamentally more at home in the non-nervous community of his adoption than in the bustle of the strenuous life of denser populations.

This interest in the practical value of zoological work was sustained by several of his students, who, following

Professor Brooks's lead, made advances in the culture of the oyster, in New England, in New Jersey, in Oregon, in Louisiana, in the Carolinas and in Maryland itself. For at the eleventh hour a good beginning was made, and Brooks's disciple, Professor Caswell Grave, the zoological member of the Shell Fish Commission of Maryland, has utilized the new legislation for a most promising realization of Professor Brooks's dreams of scientific knowledge and control of the vast natural resources of the State.

But the philosophical problems of biology always took first place in Brooks's mind, and it was at Beaufort, N. C., that he found marine life presenting the problems best suited to his patient and enthusiastic labor. The yearly work of his laboratory, established in the old Gibbs house (that boasted the distinction of being built of cypress and put together with copper nails), added much to the facts of marine embryology and to the number of now well-known investigators.

Upon that foundation was ultimately builded the present well-known marine station of the Bureau of Fisheries at Beaufort, embodying a dream that Professor Brooks could not himself realize as the university became no longer able to maintain the "Chesapeake Laboratory."

Financial embarrassments of the university led to the abandonment of steam launch and sloop and discontinuance of the university's summer school at Beaufort, but from year to year, when it was possible, temporary stations were established by Professor Brooks and his men; in the Bahamas, at Green Turtle Cay, at Nassau, at the Bimini Islands; and later in Jamaica at Port Henderson, and again at Port Antonio.

Meantime, as director of the United States Fish Commission Laboratory, at Woods Hole, in 1888, and while upon expeditions of the *Grampus*, he had opportunity to renew his acquaintance with the fauna of the North Atlantic and to explore the Gulf Stream.

From this varied experience of marine life arose those contributions to the embryology and life histories of non-vertebrates that will long endure as a monument to the industry, keen observation and no little artistic skill of Professor Brooks. His chief observations were made upon the hydromedusæ and the mollusca and crustacea, and notably upon those exceptional kin of the vertebrates, the pelagic tunicates, the salpas.

Among these contributions to the facts of marine life might be recalled his papers upon gasteropods and lamellibranchs, beginning in 1875, with a communication to the American Association for the Advancement of Science; the papers on *Lingula*, on the development of the squid, on squilla and the other stomatopods, on lucifer with its exceptional cleavage, on the macrura; and a series of papers upon salpa, culminating in 1893, after a continued interest from the first publication upon this animal in 1875, in his great monograph upon salpa, a quarto volume of nearly four hundred pages and fifty-seven plates. From his trips to the Bahamas came also his monograph on the skulls of the Lucayan Indians.

While some of this work appeared in various journals, in the publications of the Philosophical Society, the National Academy, the *Philosophical Transactions*, and in the results of the *Challenger* Expedition, much of his earlier work came first to light in "Studies from the Biological Laboratory;" but later he assumed editorship of the work in his laboratory in a series of well-illustrated quartos published by the university, as "Memoirs from the Biological Laboratory."

Professor Brooks made some contributions to systematic zoology, but his work was chiefly embryological and it is well represented by his monograph upon salpa. This is not merely an account of the embryology and organology of salpa, but creative, philosophical thought upon such problems as the probable origin of salpa, the origin of the chordates, the origin of pelagic animals, and the

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discovery of the ocean bottom and its effects upon the evolution of animals.

As is well known, Brooks's work was inspired throughout by his interest in the intellectual problems presented by animal life as well as by his love of their forms and activities. And it was this tendency to the philosophical application of zoological facts that was expressed in his later essays and lectures and finally in his book "The Foundations of Zoology." He was not a writer of text-books, yet his "Handbook of Invertebrate Zoology" shows his original and novel treatment of what was then an almost unexplored field in text-book writing, the study by the student, at the seashore, of the life-histories and eggs and larvæ of marine animals as a basis for the philosophic study of morphology. And with a more fortunate choice of publisher the book might have long continued to widen the sphere of his influence.

Dr. Brooks married, in 1877, Amelia Katherine Schultz, of Baltimore. His happy home life furnished the environment for the development of his very domestic social needs and the loving care of his devoted wife tided him through many difficult contests between his over-zeal for work and his physical restrictions. But, in the spring of 1901, after long years of suffering, lightened we hope for a time by the appreciation that came to Professor Brooks when his students requested him to sit for the portrait that they presented on his fiftieth birthday, and which came more for her comfort than for his, Mrs. Brooks passed away from life, to be followed, for us too soon, by the man whose life we rejoice in, whose death we mourn.

To the students who were taken so freely into that home life a hope of attaining the best that life has to offer, despite financial restrictions, was held forth, and there are many who recall the delightful evenings of reading and talk when they met at his house on terms of equality and free intercourse. His two children he strove to edu-

cate with freedom from too much of the burden of inherited custom and regretted the unavoidable interference of some who knew but one orthodox way for the saving of souls. As an example of the thoroughness with which he sought to apply the best to the problem of education, may be cited that he would have none but "Windsor and Newton" colors for the boy who was entering upon that period of color-love that all go into and most through, fearing lest the mind would be injured by muddy and overlapping tints, and not kept clear as he sought to hold his own. That his two children should have what he had so hardly won, the higher education, he freely spent himself. His son, as student in mathematics, received the degree of Ph. D. at the Johns Hopkins University, and is now an actuary. His daughter was graduated at Vassar and was able to comfort the last days of her father, who had had clean-cut ideas as to the highest mission of the perfect woman. Their inheritance is that education and the privilege of such parentage and nurture.

The condition of Professor Brooks's health was long a source of anxiety to his friends who knew of his heart trouble. As years passed the problem of continuing hard work with increasing bodily handicaps became very difficult. He felt that he ought not to take a period of rest and absence on account of the needs of his children, thinking to work to the end.

In 1908 difficulty in breathing added to his burdens and his machinery was most seriously out of order. He continued to come to his lectures and worked earnestly to complete a final paper on salpa, for which the drawings were finished and which he planned to write out in the summer. This, he said, would probably be his last piece of serious microscopic research, since trouble with his eyes made the employment of immersion lenses too difficult; and his mind was eager to digest the facts of his long experience and the recent work of others. But his strength was not equal to the task. Sudden attacks con-

fined him to his home, but yet his will brought him back to his laboratory, till one last day, February 12. After preparatory rest, driven by his conscientiousness, he forced himself to attend an oral examination of a candidate for the degree of Ph. D. Then walking to the train that brought him home, he was there overcome by a serious collapse. He was persuaded to go to the hospital and, after most severe attacks there, rallied; but in nine long months that followed he scarcely left his wheel-chair.

When he returned to his home he got such comfort as might be from the advent of spring, the passing of summer and the long lingering of autumn, amidst scenes so familiar and dear. Despite his critical state he was deeply interested in such news as came to him from the university. His last official act was a strong, successful plea for another when his own interests might well have absorbed his attention. His was real friendship growing out of his own wide sympathies.

While having some strength to correct the proofs of papers in press, he felt most keenly his inability to put his last work upon paper, and till this work was done he would not deem it right to retire or seek a pension. The end was imminent, but could not be predicted. His mind was still interested in books and objects of nature, down to a week from the end. Back of the weakness of organs, which he deplored, lay indomitable will and soul, masked not absent. Finally came stuporous death. After services in Trinity Church, his friends, the faculty and his students, followed the body to its resting place, on the brow of a hill overlooking a broad valley, in the cemetery of the county seat of Baltimore county.

In person, Professor Brooks was of short stature and with ruddy abundant flesh, but yet with small refined boning. Early photographs show him a strikingly thoughtful, quiet but resolute man, with the seeing eyes that remained to the last. Later, when first he came to Baltimore, Brooks was a noticeable, short man, with bushy

beard and square, thoughtful brow, very slow of speech, lacking in all superficial conversational art, content with his own thoughts and the worship of his college companion and long most faithful friend, his great St. Bernard dog, "Tige."

To many he is known only from Corner's portrait, which recalls to his older students his characteristic, Buddha-like, quiet and peaceful absorption in thought, till some inner conclusion or strong outer compulsion caused the peculiar rising glance of the eyes that saw so much and seemed to question so strangely one's inner self.

Born with a physical heart that failed to become completed as in the average man, he learned to conduct his life within the limits set by his peculiar physical organization and avoided all intense muscular efforts and sudden movements. Owing to these habits he was often misunderstood. Yet on right occasion he could exchange his slow rate of living for strong effort. With sympathy for all suffering he once lifted his great St. Bernard dog, "Jupiter," when too tired to longer follow the carriage, and thus he received a severe strain that cost him weeks of pain. Knowing both the physical and the financial handicaps of life's race we can appreciate his saying:

"The only necessary law of progress that I can discover is that it is necessary to fight pretty hard for everything worth the getting, and that it is no light or easy task to keep what has been won."*

Brooks was no friend of conventionalities, and at times might extend his absorption in the essentials of thought-life to some neglect of many superficialities that others highly prized. In the stress that comes, at times, to those who live in the country and journey daily, some factors of his dress, such as a necktie, might at times be forgotten, but if the loss were discovered, replaced by quick purchase through the faithful laboratory janitor, who

*Address at Western Reserve University, 1899.

honored, and, with good cause, loved the man whose kindness expressed itself in deeds not made public.

Professor Brooks was very fond of good reading and familiar with the classics of English literature and though he was not able to acquire a library he did get and keep at hand his favorite authors—not for their bindings but for their thoughts and modes of expression. His enviable use of English came in part from his reading but was primarily a habit of mind.

For one of his dogs that chewed up Shakespeare and Tennyson, he had only praise, as exhibiting the tastes of a gentleman, but the other that destroyed cheap novels, was a worthless rascal. An even more characteristic judgment was expressed when one of his students told him that it required three generations to make a gentleman, and he replied that he thought a gentleman was one who had consideration for the feelings of others.

In later years he developed a strong love of music, and when it became impossible to work through the evenings, as of old, he passed away many an hour in the enjoyment of classical music that mechanical devices have made reproducible by one who has had no leisure for musical education. Beethoven's fifth symphony, the overture to Tannhäuser and some fugues of Bach were favorites of his.

His love of flowers led him to make what use he could of a city window and when fate brought him a residence outside the city, a great solace to him was the diminutive greenhouse he was finally able to indulge in. Denied the opportunities that Darwin had, he could not carry on the experiments upon the breeding and heredity of plants that he wished, but when, too late, he had some little space he did such work as circumstances allowed. But it was largely as a source of pleasure and relaxation that he reared his favorite flowers. His attitude of mind towards all forms of life was expressed in the following sentence:

"As for myself, I try to treat all living things, plants as well as animals, as if they may have some small part of a sensitive life like my own, although I know nothing about the presence or absence of sense in most living things; and am no more prepared to make a negative than a positive statement."†

Brooks was not an experimenter, but an observer of natural processes, from which he endeavored to interpret logically. He saw too many facts to be long satisfied with the sharp cut result that seemed to follow from experimentally severing some portion of the phenomena from the rest. He was a recorder of nature and a philosophic reasoner about the outside universe as it appeared to his consciousness.

While there was a grain of truth in the remark of an artist who said that Brooks owed his success to the hand drawing he was able to make so well, his long labors with the painfully slow methods of pen stippling contributed to success, not so much from artistic skill as from the leisure to think which this calm, sedentary occupation afforded.

If directness be one hundred per cent. of genius, Brooks also has this claim to be regarded as a genius, for laboratory paraphernalia were always means and not ends to him, and while he enjoyed the perfection of a lens or a microtome, or a typewriting machine, or the brilliance of a selective staining fluid, technique was always reduced to its simplest terms in his work. With customary pertinacity he continued to use a simple friction tube, when a larval student would have none but a bright complexity of screws, however ill made. However, when his work demanded it, he would use all the refinements of Zeiss's apochromats, and he wished that samples of all makes of instruments might be in the laboratory in order that students might learn to use and select what was fitted to their work. From a spirit of patriotism he sought to aid

† "Foundations of Zoology," 1899, p. 17.

American instrument makers at a period when their product was but the poor things that now lie wrecked from attempts to use them.

He was sure to surprise with unexpected thought. The canals of Mars, if really due to the work of organisms, were, he suggested, on the basis of what we know here, more likely formed by social arthropods than by man-like beings, as they would be work carried on by great co-ordinate efforts through long periods.

His interest in the topics of the day was deep and real, but he was not a man to serve in public life. He contributed to the welfare of society by doing the best possible as a trained specialist.

In the question of the admission of women to universities made for men he took his stand upon the basic biological facts as he saw them, but, finally, with his usual effort to be fair, thought that the experiment might be tried as one way of finding the proper solution.

Born a decade before the appearance of the "Origin of Species," Brooks's intellectual life unfolded during that remarkable period of an overwhelming acceptance of the doctrine of evolution by means of natural selection. Most of his hard-earned facts were brought to the support of evolution as revealed by embryology. Yet the defects in Darwinism were long considered by him, and, after ten years of thought upon the problems of heredity, Brooks, in 1883, put forth in his first book, "Heredity," many ingenious thoughts that led him, then, to an attempt to reconcile the subsidiary hypothesis of Darwin, the pangenesis hypothesis, with the opposing facts of Galton. This attempt to make pangenesis acceptable as the basis of an understanding of heredity will always rank as an interesting contribution to the history of thought upon this subject, though, as Brooks expected, his special views have not been accepted. This book was put forth as a stimulus to research, "to incite and direct new experiments," he said. Its main interest lies in its revelation of the best that

could then be done toward the solution of problems that yet await such experimental evidence as alone may make their solution possible.

The lectures and essays that grew into his book, "The Foundations of Zoology," published in 1899, and again in a revised edition, show Professor Brooks's breadth and depth of philosophical thought, and it is upon this work that his claim to a place amongst our immortals will largely rest.

But the estimate of Brooks as a leader of philosophical zoology can best be left to the perspective that time will bring, and to the minds of another generation biased neither by love of Professor Brooks as a man nor, on the other hand, by an absorption in the activities of our present transition period of zoological methods and ideals. What we can most surely appraise at the present moment is the work of Brooks as friend and teacher, an inspiration and example. Men who have worked in close contact with Brooks now hold commanding positions in the intellectual life of the world: the influence of their living presence is exerted in Japan, and in England, in South Africa and in Canada, and through his native country from Maine to the gulf and from ocean to ocean. On March 25, 1898, sixty of these students and friends contributed with genuine feeling to celebrate his fiftieth birthday. It was truly an unique personality that had added to their rational enjoyment of life and helped in their own struggles for ideals.

These students of a pioneer in the field of American embryology have naturally followed his lead and their observations have been an extension and elaboration of his work, whether in the same field or in newer ones recently opened. His philosophical mind left its impress upon their ways of thought in whatever part of zoology they labored. The old problems of heredity are now attacked by new methods, but some of the foremost investigators are bound to Professor Brooks, more or less intimately, by nurture got when he was a stimulating if

not also a formative part of their environment. Thus William Bateson, the present leader in studies of variation and heredity, coming to the Chesapeake laboratory to continue embryological studies on *Blanoglossus* and the origin of the vertebrates, first heard the problems of heredity, from Brooks, in long and intimate discussion and exposition.

Professor Brooks's religious beliefs remain unknown to me, but the view-point of his intellect may be inferred from the following extracts from the "Foundations of Zoology":

"If any believe they have evidence of a power outside nature to which both its origin and its maintenance from day to day are due, physical science tells them nothing inconsistent with this belief. If failure to find any sustaining virtue in matter and motion is evidence of an external sustaining power, physical science affords this evidence; but no one who admits this can hope to escape calumny; although it seems clear that the man of science is right, . . . for refusing to admit that he knows the laws of physical nature in any way except as observed order.

"Many will, no doubt, receive with incredulity the assertion that the ultimate establishment of mechanical conceptions of life has no bearing, either positively or negatively, upon the validity of such beliefs as the doctrine of immortality, for example. The opinion that life may be deducible from the properties of protoplasm has, by almost universal consent, been held to involve the admission that the destruction of the living organism is, of *necessity,* the annihilation of life. Yet it seems clear that this deduction is utterly baseless and unscientific; . . . if it be admitted that we find in nature no reason why events should occur together except the fact that they do, is it not clear that we can give no reason why life and protoplasm should be associated except the fact that they are? And is it not equally clear that this is no reason why they may not exist separately?"

Those who were with him during long periods of work continued despite illness know his control, those few who saw him seized with bitter pain know his fortitude.

Beneath his passive exterior much went on that rarely came to the surface and he had strong antipathies and emotions held in check by a strong will and philosophical balance. That he could take risks will be recalled by those whom he, as licensed pilot, brought safely into harbor, though the keel of the schooner scraped the bar in the trough of the heavy ground swell.

His stern sense of duty drove him to many tasks he neither liked nor felt he had the natural bent for. His conscientiousness and punctilious regard for justice and honesty brought him into antagonism with many customs and with persons of less sharply defined honesty.

In many excellencies he was a child to whom wisdom of experience had come; his spirit retained the simplicity of the child and a child's interest in the outer world as something apart from self, and did not readily acquire the conventional content with mere getting and eating.

Many have warm hearts for the clear teacher and wise friend who lived much on a higher plane of work and thought, above many petty considerations of immediate expediency. His faults but add to the charm of that large, luminous picture of virtues that the recollection of him calls up in our minds.

Who again will teach us, as Brooks did, that "that hardest of intellectual virtues is philosophic doubt, and the mental vice to which we are most prone is our tendency to assume that lack of evidence for an opinion is a reason for believing something else."*

May the Johns Hopkins University treasure as ever living the example of Brooks, the naturalist—one of the two members of her illustrious faculty of whom their great leader, Gilman, said they pre-eminently were "men born for lives of research."

*"Science or Poetry," 1895.

REUNION OF THE ALUMNI

NOVEMBER, 1908*

A reunion of former students of the University was held in Baltimore, on the 19th, 20th, and 21st of November, 1908. The principal features were a "smoker" at the Johns Hopkins club; a meeting in commemoration of President Gilman; a "tea" given by the Alumni Association; class dinners; a football game at Homewood; and a reception by the President and Board of Trustees of the University.

The reunion was the unexpected development of a movement begun last spring, when the general Athletic Association appointed a committee to consider the possibility of stimulating the interest of former students, and to arrange for an athletic reunion, if this should be deemed advisable. The committee consisted of the following persons: George L. Radcliffe (A. B., 1897, Ph. D., 1900), chairman; Ronald T. Abercrombie (A. B., 1900, M. D., 1904); Theodore E. Straus (Proficient in Electricity, 1894); Joseph T. England (A. B., 1902); James Baily (1909). During the summer the members of the committee were constantly in touch, by correspondence and otherwise, with many of the older alumni. These displayed a keen interest in the proposed gathering, but two facts soon became apparent. One of them was that a very large number of the alumni were not attracted especially by the prospects of an athletic reunion, but looked forward eagerly to a meeting embodying class and other social features. The second point was that all of the former athletes were desirous that the reunion should embrace other features in addition to the athletic ones

*Prepared by Mr. George L. Radcliffe, Chairman of the General Committee.

contemplated. As a result, its scope was much enlarged, and plans were considered for a general reunion in which athletic events should not occupy the greater part of the time. The committee then offered to turn over the entire matter to the Alumni Association, but the latter requested the committee to continue the work begun, offered its hearty co-operation, and promptly arranged to take charge of several of the principal features. Efforts were made to enlist the support of the President and Board of Trustees of the University, and of other bodies and interests closely allied with the University. The enthusiasm and spirit of activity which met this attempt encouraged the committee to at once make the needful arrangements. President Remsen gave an emphatic endorsement of the idea and assured the committee of his desire and intention to assist in every way. The Board of Trustees appointed the following committee to co-operate with the alumni, viz: Messrs. Waldo Newcomer, Thomas J. Morris, Blanchard Randall, and Miles White, Jr. As soon as the President of the Johns Hopkins Club, Mr. George Cator, heard of the proposed reunion, and long before any arrangements were made for it, he pledged the support of the club, and promised that it would take any part desired, and that, if the club should not feel able to pay the expenses incurred in doing so, he personally would pay them.

The proposition to hold class reunions awakened great interest and enlisted the support of many of the old alumni. The general committee, in co-operation with Mr. Horace S. Whitman (A. B., 1901), who acted as general chairman of the class reunions, appointed a special committee for each class as follows: 1879, G. W. McCreary; 1880, H. F. Reid; 1881, J. H. Johnson; 1882, Edward Ingle; 1883, H. W. Williams; 1884, G. D. Penniman, J. Williams Lord; 1885, John Glenn, Jr.; 1886, Allan McLane; 1887, R. H. Bayard, Edward Duffy; 1888, Walter Jones, A. L. Lamb, A. L. Browne; 1889, Waldo

Newcomer, W. T. Watson; 1890, Vernon Cook, S. M. Cone, William Whitridge; 1891, A. J. Shriver, G. W. Dobbin; 1892, L. L. Stevens, T. D. Penniman, T. R. Brown; 1893, H. S. West, M. A. Soper; 1894, B. H. Griswold, W. S. Baer, J. P. Thom; 1895, H. W. Buckler, W. S. Bansemer; 1896, W. D. Lilly, A. C. Binswanger, J. E. Shaw; 1897, F. H. Baetjer, A. J. Underhill, F. A. Hancock; 1898, C. S. Hodges, L. H. Fowler; 1899, W. M. Krager, J. M. Mullen, G. W. Knapp, J. H. King, Maurice Lazenby; 1900, W. L. Smith, J. P. Hill, Frederick Foster; 1901, J. E. Tyler, A. R. Bird, J. S. Briscoe; 1902, W. E. Hoffman, Jr., W. C. Schmeisser, Aubrey Pearre, Jr.; 1903, R. C. Hoffman, Jr., J. W. Bryan, H. N. Baetjer, L. M. R. Willis; 1904, B. F. Cator, Sifford Pearre, R. G. Dulany; 1905, Robertson Griswold, W. A. Baetjer, A. S. Bowie, L. A. Dill; 1906, W. C. Smith, Joseph S. Hill, Carlyle Barton; 1907, Wallis Giffen, C. F. Pietsch, W. E. Bird; 1908, J. P. Wright. Nearly every class, beginning with the first (1879), was represented at the conference which followed the first notice sent out by Mr. Whitman. In a very short time the special committees of the different classes had succeeded in getting in touch with their respective classmates.

For two months before the reunion, a letter, or some form of appeal to the alumni, was issued once a week, on an average, and in almost every instance from a different source. Thus, the general letter of the committee was followed in succession by letters from the Alumni Association, the Johns Hopkins Club, the class committees, the athletic board, the musical committees, individual alumni, etc. In addition to the general committee and the special class committees referred to above, the following committees were active: *Faculty,* Professor Renouf; *Alumni Association,* A. J. Shriver; *Johns Hopkins Club.* J. N. Ulman; *Reception,* R. C. Hoffman, Jr., T. R. Brown; *Tea,* Philip Ogden; *Registration,* B. F. Cator; *Finance,*

T. E. Straus; *Hopkins Folk-Lore,* J. H. Edmondson; *Statistics,* G. E. Barnett; *Publicity,* C. A. Marshall; *Musical Clubs,* J. G. Peters, W. M. Krager, J. W. Bryan; *Glee Club,* J. H. Eager, Jr.; *Prize Song,* J. H. Eager, Jr., F. J. Clunet, Edward Ingle; *Transportation,* R. M. Diggs; *Photographs,* Reginald Opie; *Poet,* J. McC. Trippe; *Post-Graduate Athletic Degrees,* W. S. Symington, Jr., S. S. Janney, A. C. Ritchie; *Class Banners, Hullabaloos, etc.,* H. L. Russell; *Chief Marshal of Rooters,* S. P. Harwood; *Student Trophies,* W. J. Sneeringer; *Decorations,* W. W. Pagon; *Non-local Press,* J. S. Briscoe; *Hospitality,* J. M. Holmes; *Roster of Teams,* James Baily; *Roster of Students,* G. A. Stewart; *History of Lacrosse,* R. T. Abercrombie, W. C. Schmeisser; *History of Track Athletics,* J. T. England; *History of Football,* J. A. Sayler, Jr.; *History of Baseball,* T. G. Campbell; *History of Gymnasium,* G. C. Keidel; *History of Hockey,* G. B. Scholl.

The reunion began with a "smoker" at the Johns Hopkins Club on the evening of Thursday, November 19th. The large home of the club was crowded during the entire evening with hundreds of former Hopkins students. The following day at three o'clock the alumni gathered in McCoy Hall to commemorate the work of the late President Gilman. The meeting was presided over by the President of the Alumni Association, Dr. J. Whitridge Williams. Addresses* were made by Professor Charles M. Andrews, Dr. Fabian Franklin, Professor William H. Howell, and Charles Morris Howard, Esq. Later in the afternoon, under the direction of Professor Philip Ogden, tea was served in the Donovan Room.

Friday night was devoted to class dinners, every class giving a dinner, although, because of their small size, several of the older classes met at a single table. The attendance was surprisingly large, fully five hundred of

*These addresses are printed in subsequent pages of this Circular.

the former collegiate students being present. These included many who had come from a distance, as well as practically all the alumni living in Baltimore. For instance, over two-thirds of the living members of the class of 1884 were present. All the dinners were given at the Hotel Caswell, with the following exceptions: "1889" was entertained at the Stafford by Mr. Waldo Newcomer; "1891" dined at the University Club; "1892" at Wegner's; "1893" and "1901" at the New Carrollton. Some of the classes had been meeting annually, but many of them had not met since graduation. Alumni organizations were made or perfected, and arrangements made for class reunions in the future. In the course of the evening a message was sent to President Remsen by each class, signed by every member present, conveying to him their best wishes and expressing confidence in his management of the University and in its future achievements.

Saturday afternoon, on "Hopkins Field," at Homewood, a football game was played between the Johns Hopkins team and its traditional rival in football, the eleven of St. John's College. The attendance was estimated at six thousand and was entirely unprecedented in the history of the University. The appearance of the classes with their banners, grotesque costumes, and bands, and many of the other features, are not likely to be soon forgotten by those present, and seemed to indicate clearly the intention of the alumni to attend and support athletic events of the Hopkins as never before. At this game many of the alumni saw for the first time the spacious concrete stand and the carefully-constructed athletic field recently completed.

Saturday evening, at eight o'clock, the President and Board of Trustees received the alumni in McCoy Hall, which had been decorated with class banners and with many relics of historic interest to the alumni. President Remsen, in his speech of welcome, expressed his pleasure

at having the alumni with him again, and his hope that in the future many opportunities would be afforded for similar reunions. He referred briefly to the general work of the University, stating that its efficiency had at no time been impaired, but, on the contrary, had steadily gone forward. Mr. R. Brent Keyser, President of the Board of Trustees, spoke of the work of developing Homewood, now going on, and referred to the many things which had already been done to bring about the future removal thither. Dean Griffin expressed his pleasure at meeting again so many of his former students. The reminiscences and general remarks of Messrs. Arthur Steuart and George Dobbin Penniman, who were called on from the alumni by President Remsen, were very interesting. Mr. James McConky Trippe (A. B., 1896) read a poem, which he had written for the occasion at the request of the reunion committee.

Many features of minor importance figured in the reunion, but they will not be dwelt upon in detail here. From the many enthusiastic letters written to the general committee by the alumni throughout the country, and from the encouragement received generally, the committee looked forward with pleasure to the coming reunion and hoped that it would prove the means of bringing together many former students of the University, but they did not dare hope for the outpouring of interest and enthusiasm which resulted. No effort was made, either before the reunion or during its progress, to focus the attention of the alumni upon any special plan for the welfare of the University, since the committee believed the wisest thing would be to attempt nothing more than to afford to the alumni opportunities for coming together and being together. It is needless to say that there was, however, on the part of the committee, always the hope and desire that this reunion would strengthen, in the mind and heart of every alumnus, the intention to do everything in his

power for the promotion of the interests of the University. Any movement in the future, which will have this end in view, should receive some help and impetus from the meeting of the alumni last November.

ADDRESSES COMMEMORATIVE OF DR. GILMAN

DELIVERED BY ALUMNI IN McCOY HALL

NOVEMBER 20, 1908

CHARLES M. ANDREWS, PH. D.

PROFESSOR OF HISTORY

I deem it an especial privilege to be allowed to take part in the exercises this afternoon, honoring the memory of Dr. Gilman and recalling the aspects of his life which relate to the upbuilding of this University. We did not think, when but nine months ago we voiced in a formal resolution our regret at his absence from the yearly banquet, that before another year had passed we should gather to pay tribute to his memory. His absence from our dinner of February 22 was not due to ill health, and when we took action on that occasion expressing our regret that, at the last moment, he found himself unable to be present, it was but the putting into formal words the feeling of loyalty and affection which we all had for him. It is, therefore, with peculiar pleasure that I read here, to-day, the last communication that the Alumni as a body received from him, his answer to my letter conveying to him the resolution of the Association. He wrote as follows: "I thank you and through you the members of the Alumni Association for the kind expression conveyed to me in your note of yesterday. Such tokens of regard are among the most gratifying incidents of advancing years, and this, the latest, I value among the pleasantest that I have ever received." Dr. Gilman valued very highly the good-will of the Alumni of the University and was proud of the loyalty which they had for him. I recall his pleasure when, last February, he received a telegram of greeting from an association of the Western Alumni,

addressed to "the true Founder of the true American University."

It is in a sense appropriate that a representative of the department of history and political science should have some share in discussing the part that Dr. Gilman played in the academic life of this University. I only wish that the opportunity might have fallen into more worthy hands. One of Dr. Gilman's earliest interests was in the field of history and was almost coincident with his interest in education. It is significant that one of his very earliest writings, contributed to Barnard's *Journal of Education,* in March, 1856, when he was but twenty-four years old, was on "scientific schools in Europe considered in reference to their prevalence, utility, scope, and desirability in America," and that his earliest public address, of which I can obtain knowledge, was "A Historical Discourse, delivered in Norwich, Connecticut, September 7, 1859, at the Bi-Centennial celebration of the Settlement of the Town." This address, delivered in the home of his ancestors and promoted to no small extent by his father's enthusiasm for historical inquiries, is a work of 124 pages, founded on extensive historical research and bearing witness to a wide familiarity with early New England history. This interest in history and in historical studies Dr. Gilman never lost, though he could only turn to it occasionally or in connection with other subjects to which he gave more attention. Even at the time when he was delivering his historical sketch, at Norwich, he was acting as chairman of the Visiting Committee of the public schools of New Haven, and published two papers, one containing suggestions respecting a course of study for children between the ages of six and twelve years, and the other on common schools and the English language, both issued in 1860.

Thus, at the very outset of his career, Dr. Gilman indicated the two interests that were to dominate him during the years that followed. The interest in history expanded

into a larger devotion to many subjects more or less closely related—such as geography, especially physical and political geography, the title of the chair which he held for many years, till 1872, in the Sheffield Scientific School; political science, in which he dealt with the relation of the State to education, morality, and philanthropy; social science, in which he concerned himself with a wide group of subjects relating to social organization and the ethical functions of citizenship, not only preaching the duty of understanding and answering the great questions of the day, but himself putting these doctrines into practice by accepting membership in societies and on commissions—such as the American Social Science Association and the National Civil Service Reform League—of many of which he became president or vice-president; and lastly, oriental languages and archæology, serving for thirteen years as the president of the Oriental Society and for a number of years as vice-president of the Archæological Institute of America.

In his activity as speaker and lecturer within the University, I suppose that Dr. Gilman stood more closely in touch with history and political science than with any other single phase of the University's academic life. I do not mean that he gave it thereby preference, but I do mean that his own interest, outside of the field of education, lay, as we have already seen, with the subjects that that department represented. Outside the University he was a member of the American Historical Association and of the Massachusetts Historical Society; he was a member of the United States Commission on the Venezuela boundary, which had a problem to solve that was essentially historical and geographical; he was one of the seven members appointed to draft the new charter for the city of Baltimore, and the table at which the charter was drawn stands to-day outside the door of the historical seminary in this hall. Within the University he was frequent in his offer of service to the department. He became

the first president of the History and Political Science Association, then a semi-public gathering holding its meetings in the old hall of the University. He occasionally attended meetings of Dr. Adams's seminary, and I can recall a number of talks which he gave upon the importance of geography in the study of history, illustrated by maps which were hung upon the walls of the seminary room. In 1889 he delivered in the same room a course of lectures on social science, of which a syllabus was prepared and distributed to all the members of the class, one of which I have preserved from that day to this. In the introductory outline he disclosed the unity of his interests. Social science was not law, not political economy, not history, not religion, but it was closely related to all these; it was to be studied by methods that were common to other sciences, by observation and comparison, and by historical, statistical, biographical, and philosophical inquiry, while in the working out of the methods involved he laid particular stress upon a study of the historical development of the actual conditions of society. In these lectures, as in others, he was constantly emphasizing the necessity of taking an historical view of every subject, realizing that man has been gradually becoming what he is and that it is not possible to ignore these historical processes any more than it is possible to ignore the importance of man's geographical surroundings. In a review, written as far back as 1867, he says, "Never, probably, in the history of the country was it more desirable that the study of History, Law, Political Economy, Philosophy, Literature, and all these humanities should be kept up and that young men should learn to value the lessons of the past and to take counsel from the thoughts of the wise men of every age and country."

But I should give a very inadequate idea of the trend of Dr. Gilman's academic interests did I seem to imply that history gained any undue attention from him. I think that he felt more at home in history and the social

sciences than in other subjects, but it was inevitable that the demands of his position as president of a university and his naturally inquisitive and embracing mind should lead him to pay keen attention to all aspects of education and scholarship, however remote they might be from the phases that were peculiarly his own. As early as 1871, appointed by the Commissioner of Education to investigate and report on the condition of the various scientific and agricultural schools in the northern States east of the Rocky Mountains, he made an elaborate report on these schools and indicated therein a deep appreciation of the value of a scientific research and the need of technical training, subjects that became to him matters of increasing importance as years passed by. He urged in this report, and he urged constantly afterward, that the prosecution of the most rigid scientific inquiry involved no hostility toward literary and classical training. The next year he read a paper before the American Geographical Society, reviewing a decade of geographical activity and showing familiarity with the work of the departments of the National Government, involving subjects such as geology, hydrography, topography and surveying, botany, paleontology, and ornithology, in all of which he had a deep and pervading interest. Even when delivering an address to the members of the graduating class of the Naval Academy in 1876, in his official capacity as one of the board of visitors, he combined an historical sketch with an encomium upon the scientific attainments of the naval service and the contributions of eminent naval officials to science in general. The more one reads of Dr. Gilman's earlier papers, the more is one impressed with the fact that no phase of modern education and modern progress lay outside the range of his eager mind, and that, even before he had begun his great task of founding and building this University, he had already disclosed in his printed work a breadth of view, a complexity of intellectual interests, a grasp of the multiple phe-

nomena of modern education and social organization that were to characterize his career as president of the University.

I do not here speak of his interest in medical progress. That will be done by one who is an expert, and I should not presume to anticipate what he may have to say. But I do recall the astonishment with which I listened, on the occasion of the opening of the hospital, to an address by him which seemed to handle with amazing facility aspects of medical progress which might well be deemed beyond the grasp of a layman. And I recall also the address which he delivered in 1898, on the occasion of the opening of a new home for the Medical Society of Connecticut, in my native town of Hartford, an address which clearly showed that if he was not one of the medical fraternity, he was certainly at home among them, and if he could not speak with the knowledge of a professional he, at least, could show how an outsider looked at the progress of their science and estimated their advances. It is worthy of note that on that occasion his chief interest lay in the history of medicine, the progress of the science from Harvey to the present time, but it is also worthy of note that in the course of his address he disclosed an intimate knowledge of instruments and methods that were employed in furthering the cause of medical science. One would have thought that he had lived among the doctors.

Next to this wide and embracing desire to make all fields of intellectual and scientific activity his own, Dr. Gilman's greatest gift to this University on its academic side was the unqualified approval of the highest scientific ideals. In his earliest writings, in the sixties, we find him laying down certain very important criteria, which were far from being generally appreciated at that time. "Where there is a university organization," he wrote, "the constant effort should be made to educate men of science, able to investigate, competent to teach, pro-

ficient in specialties. . . . We observe a tendency, already manifest in a considerable degree, to mark out on paper long lists of 'chairs' which it is proposed to fill. But in our opinion it is not half so important what the professorships are as who the professors are. It is the men who make the college, not the titles of the catalogue. A corps of instructors, young, manly, thorough, truth-loving, able to teach, speak, and encourage, will do more to give character and success to a foundation than a corps of older men who may have been titular professors for a quarter of a century, but who are not possessed with the spirit of modern inquiry." How splendidly he lived up to this faith, enunciated ten years before this University was opened, and how splendidly this faith found its fulfilment is a matter of record. Two natural consequences of great significance in the academic life of this University have followed the application of this ideal, when after 1876 it became the guiding principle governing the attitude of the president toward the staff with which he surrounded himself. First, that the highest standards in methods of teaching and of research found sympathetic approval and hearty support at Dr. Gilman's hands, and no instructor, enthusiastic, truth-loving, and ambitious, ever met other obstacles in his path than those which arose from the natural difficulties of his task; and secondly, because of the fact that Dr. Gilman manned this University at its outset with a harmonious body of instructors, each able to do something beyond his specialty and eager for the general good, a spirit of peace and fraternal good-will has hovered over its government and administration from its foundation to the present time. How much these two great results have contributed to the effectiveness of the work here done, both for teaching within and for scholarship without, only those familiar with the limitations and dissensions prevailing all too frequently in American colleges can estimate. To Dr. Gilman is due the establishment of these academic traditions, which I hope may

never be reversed as long as the Johns Hopkins University shall endure.

I have but one word more to say, and that concerns Dr. Gilman's own attainments in the world of scholarship. He lived amid surroundings where the truest ideals of scholarship reigned, he viewed with the highest satisfaction the attainments and productions of those who were with him or about him, he incited the younger generation to efforts that culminated in thorough and painstaking work, he discouraged self-satisfaction with any result, no matter how highly applauded, but his busy life gave him no opportunity to leave behind him any monument in printer's ink which represented prolonged research or marked important advance in any field of scientific endeavor. His monument is of another kind. He gave himself to the building of a home for scholars, to the preparing of the soil in which the seeds of scholarship found rich nourishment for prolific growth, in creating an atmosphere which stimulated the scholar to develop the best that was in him and to embody his efforts in a form admired of the scientific world. But if Dr. Gilman never actually entered into that narrower field, to which too often the term scholarship is limited, he was a man of scholarly attainments in the larger world where culture and the humanities hold important place. He was a scholar of wide and versatile learning, to whom little that concerned the uplifting of the human race was foreign; he was learned with an intimate knowledge of what the laboratories, the seminaries, the exploring expeditions, the archæological investigations, and the scores of other *fontes* of scientific knowledge were pouring forth for the advancement of learning; he possessed the scholarly power of co-ordinating the results which others attained and of showing the significance of these results for civilization in general. His was a type of scholarship which is all too rare, and the world would be poor indeed were it to suffer eclipse. Minute and painstaking research,

deep insight into the laws and operations of nature, critical exposition of the texts with which philology and history are concerned, would fail of half their purpose did they not contribute to the knowledge of men like Dr. Gilman, who, by understanding, appreciation, and encouragement, are able to interpret the educational significance of the great advances in the scientific world. Dr. Gilman's scholarship was the sum of the best that science in all its aspects was able to produce, and the influence of such scholarly acquirements and such scholarly ideals upon the community of the learned and the unlearned is beyond our calculation.

WILLIAM H. HOWELL, PH. D.

DEAN OF THE MEDICAL FACULTY

Whenever, since Mr. Gilman's death, I have attempted to formulate for myself an estimate of his services, I have finally summed it all up in an expression of his own, which I heard him use on the occasion of the memorial exercises to the late Professor Rowland. I remember the occasion well. As he advanced to the edge of this platform to open the exercises, looking silently at his audience for a few seconds, he began his remarks by the simple sentence, made impressive by his manner, "A great man has fallen in our ranks." I am confident that this estimate, applied to him, is shared by every one in this audience and by all of our fellow alumni of the Johns Hopkins University. He was a great man, and above all a great college president. He was a great president by virtue of the fact that he was a man of ideas and high ideals which reacted like a stimulus upon all who were brought into contact with him; he was a great president because of his masterly genius for organization; but he was a great president chiefly, in my judgment, because he possessed in such large degree the rare power of getting the best out of

those who worked with him and under him. He led and guided them by the all-constraining force of his enthusiasm, his sympathy, and his tact. The kind of executive who drives things before him by the mere force of his personality, is liable, in accordance with the law of action and reaction, to create round himself an atmosphere of opposition and discontent. Such an executive may be needed in some of the affairs of life, but he is not the type most suited to develop the greatest efficiency of a university faculty. This University was most fortunate in possessing in Mr. Gilman a leader and executive who, by reason of a happy combination of genial qualities of mind and heart, was able to inspire a general and enthusiastic spirit of co-operation among his official subordinates. We must never forget, nor allow others to forget, that the great success which this University attained, almost from the beginning, was in large part, in chief part, due to him. The creation of a university of a new type was not a game that played itself. On the contrary, there was opportunity in abundance for mistakes and disaster, and if, instead, there came, on the academic side, a train of successes and renown, we owe it largely to his ability and experience as a leader and administrator.

I have been asked to speak of Mr. Gilman, especially in regard to his connection with the medical school. In truth the medical department owes as much to his wise and stimulating leadership as its older comrade, the philosophical faculty. It is well known that the subject of medical education interested Mr. Gilman deeply. What circumstances gave this direction to his thoughts I am not able to say from personal knowledge. I know only that it antedated his connection with this institution. That a special interest existed is evident from his published addresses, as well as from the record of his services while President. In his inaugural address the subject of the formation of a worthy school of medicine comes up first, and the hope is expressed that at no very distant day a

medical faculty may be organized. So also, in describing the purpose and aims of the biological department, which constituted a novel feature in the newly-established university, he laid great emphasis upon its importance in relation to the study of medicine. Indeed, from the beginning of the University there was organized a pre-medical course along the lines which had been laid down by Huxley, a course which, in its general features, has since been endorsed and imitated by many of the leading schools of the country. As a matter of fact medical education among us at the time of the founding of the University was in a deplorable condition. Deprived of adequate financial support and without the uplifting aid of an academic connection, most of our medical schools had sunk to a very low level. They demanded practically no educational preparation on the part of their matriculates, and they made little or no effort to give their students an adequate training in the theory and science of medicine. The training, in fact, resembled that of an apprentice rather than that of a candidate for admission to a learned profession. Mr. Gilman, with his wide interest in education in general, must have been impressed, as many other thoughtful men were, with this very undesirable state of affairs. With the prevision characteristic of a great leader, he seems to have selected medical education as one of the great opportunities which the new university might utilize to do a needed service to the country at large. For reasons over which he certainly had no control the realization of his plans was deferred for some seventeen years. It was not until 1893 that the medical school, as we now know it, was founded. It was and is a graduate school in the sense that it accepts as students only those who are college graduates. At the time of its foundation its requirements for entrance seemed almost absurdly high. It was supposed that only a few students each year would be willing to meet these requirements, considering that in the other leading schools the conditions for entrance were so much

BIOLOGICAL
WOODS HOLE

less difficult; and the idea that our standards would ever be adopted generally by other schools was scarcely reckoned among the probabilities. Yet, to-day, this school has 300 students upon its rolls, and for many years past there has been a steady approximation on the part of other good medical schools toward the standards established here. Many agencies have undoubtedly contributed to the great improvement in medical education which has taken place in this country during the last generation —volunteer organizations among high-minded physicians, the effective action of our State Boards, etc.,—but I believe it will be admitted that the actual example held before the eyes of the medical public, in the successful experiment carried out here under Mr. Gilman's direction, has been the most potent influence of all in strengthening the weak faith of those who doubted the feasibility of such a reform.

Many speakers and writers have commented upon the timeliness of the foundation of the Johns Hopkins University. The University was started at a time when the country was ripe for the opportunity to obtain genuine graduate instruction. Certainly the same observation may be made with even more justice in regard to the appropriateness of the movement inaugurated by the foundation of the medical school. The country was prepared, indeed had been prepared for some years, for a development of this kind. Mr. Gilman and his colleagues had the wisdom to understand this, and the courage to make the experiment on a scale befitting the reputation of the University and worthy of the unique opportunity afforded by the existence and close affiliation of that splendid sister institution, the Johns Hopkins Hospital.

Mr. Gilman's devotion to the affairs of the medical school in its early history was unfailing. He gave to it on the administrative side an ideal organization which has been the envy of other schools, and which will eventually, I believe, be generally adopted. The central feature

of this organization is that it places all power in the hands of a small but representative body, composed of the heads of departments, the president, and the superintendent of the hospital. Over the deliberations of this body he presided constantly during his incumbency, and it is needless, for those who knew him, to add that he was a most admirable presiding officer. Courteous, considerate, and informal he invited a free expression of opinion from all, but he knew well the art of controlling gently but firmly all tendencies to useless and diffuse discussion. The routine business was dispatched with promptness, while matters of importance from the standpoint of policy or precedent were treated with care and circumspection. A more harmonious and effective board it would be hard to imagine, and, indeed, how could it have been otherwise with a man like Gilman as presiding officer and a man like Welch as dean and secretary. Our foundations were well laid, and I am sure that the great success of the school, acknowledged everywhere, was a source of the deepest gratification to Mr. Gilman. It may be fairly claimed that it constituted his second great contribution to the educational development of this country. I hope that the future historian of medical education in the United States will not make the mistake of supposing, because Mr. Gilman was not a member of the medical profession, that therefore his connection with this medical school was in any sense perfunctory. On the contrary, it was real, it was vital, and it was continuously maintained. And through it all those who were associated with him must have been greatly impressed by the fact that in this, as in the other great enterprises of which he formed a part, there was no thought of self. He was working for a great purpose, the nobility and importance of which were constantly present to his own mind and were by him transmitted to his associates and colleagues.

CHARLES MORRIS HOWARD, A. B.

OF THE BALTIMORE BAR

It is not easy in brief compass adequately to portray Mr. Gilman, or to describe his useful activities. Fortunately, this has already been done and ably done.

On the occasion of the University's twenty-fifth anniversary, in 1902, many eminent scholars gathered here and did justice to this great University. To do it justice was in itself to do it honor. To do it justice was also necessarily to recognize the power and wisdom of Gilman. Its twenty-five years of life were the twenty-five best years of his life, its trials were his trials, and its triumphs in a large measure his triumphs.

And again, one week ago last Sunday, those who knew him best and who had labored with him and were most capable of judging him, gave eloquent utterance to his services and work. When men like Remsen, Gildersleeve, and Welch unite in ascribing to Mr. Gilman a large measure of the success of their several departments and of the success of the University as a whole, it is evident that these are no conventional panegyrics, but the simple truth. Just as it is clear that this University at its foundation represented a striking and important departure in educational methods, and since its foundation has stood for searching investigation and high ideals; just as it is clear that an unique institution was created, which at once took its place in the very front rank, so it must be clear that the man who had the creative part in this possessed extraordinary genius, tact, and tenacity. It is not necessary for the alumni to record his abilities and high-minded devotion to humanity by anything that they may say here. It is sufficient for them to know these qualities and appreciate them.

Genius he certainly possessed in many lines. As an assembler of men of ability he possessed extraordinary

aptitude. He had an almost unerring instinct as to men, a power of human diagnosis. But the possession of mental endowments alone is not the basis for the tributes that have been accorded to Mr. Gilman. His real claim upon us and his generation rests upon the way in which he employed his gifts. He might easily have used his great organizing ability in the pursuit of wealth or power. But, fortunately for the country, he placed it at the disposal of his countrymen. He possessed the ten talents, but he neither converted them to his personal ends nor hid them in a napkin. They were held in trust. When humanity is thus made the beneficiary of an active and productive life, it is natural as well as just that it should strive to pay, in part at least, its debt of gratitude when these activities are interrupted by death, although words even at their best are but a poor exchange for deeds. Fortunately, the forces which he organized and the plans which he perfected will not stop, and their beneficent effects will be felt in the centuries to come.

In Mr. Gilman the idealist and the man of affairs were happily blended. We sometimes hear the practical and the theoretical man contrasted, as if they involved a contradiction, but this is not true. Both may co-exist and in a life such as his they must of necessity co-exist. Such a man must have glimpses of the divine philosophy, which is said to be as musical as is Apollo's lute. His ears must be attuned to hear the music of the spheres, but this fine cultivation does not render him the less practical, if the humanities are of the heart as well as of the head. He is guided by the higher things, but it is this life which he is seeking to improve. The function of the idealist has been well described by the late Carl Schurz, when he said "Ideals are like stars. You will not succeed in touching them with your hands, but, like the sea-faring man on the desert of waters, you choose them as your guides and following them you reach your destination." No man not an idealist could have established this University, whose

duty it is to seek the truth and proclaim it freely. Nor could any but a man of the finest practical sense have solved its problems. Truly he has built his own monument, like Sir Christopher Wren. If you seek it, look around you.

Fellow alumni, I think that eulogy from us is superfluous. There is only one effective way for us to show our genuine appreciation both of Gilman and of whatever is best in the University, and that is to emulate its high ideals and help to realize them in this world. If all the alumni of this distinguished University will seek after truth, battle for the right, and habitually ally themselves to those things that are worthy and of good report, Gilman will need no eulogist; for his life-work will then have borne fruit and his labor will not have been in vain.

FABIAN FRANKLIN, PH. D.

OF BALTIMORE

To speak about President Gilman to an audience of Johns Hopkins alumni is to me a difficult task. It is easy to speak of him and his work to outsiders, for one has, with them, the feeling that they may not know what the work here accomplished thirty years ago really was, nor what his part in achieving it. It is always with a glow of pride and enthusiasm that one repeats the many-times-told tale of the making of the Johns Hopkins University, when occasion offers for reciting it afresh to the outside public; and surely no occasion for recalling that memorable history could be more appropriate than that presented by the passing away of its presiding genius. But in speaking to Johns Hopkins men I cannot escape the feeling is something like that which led to the gradual known to them as well as to myself; that to recapitulate it would be to perform at most a conventional duty. The feeling is something like that which led to the gradual

decline and disappearance of the Fourth of July oration—a phenomenon which does not by any means necessarily argue a decay of patriotism; it seemed as though everything that could be said about the achievement of our country's independence was so familiar to every American that the renewal of it on each recurring anniversary could be nothing more than a matter of form.

And, yet, it is possible that, in feeling thus about the events which formed the central fact in President Gilman's life, I may be laboring under one of those illusions that so frequently attend upon advancing years. The men who in their early manhood took part in the work of the opening years of the Johns Hopkins, are now at just that age when they are beginning to grow old, and still have not left off the habit of instinctively classing themselves among the young. It is only by a conscious effort that I can make myself realize that the time which has passed since the foundation of the Johns Hopkins University is as long as that which intervened between the war of 1812 and the Mexican War, and more than twice as long as that which separated the Mexican War from the great Civil War. The events of the Civil War are vivid recollections of my own boyhood, and yet there was never a time when the Mexican War did not seem to me to belong to a remote past—a thing to be read about in history-books, like the Revolutionary War or the Protestant Reformation. And so it may be that, to many of the younger men before me to-day, the state of things in the college and university world of America before 1876 is almost as much a matter of mere book-learning as was to me the massacre at the Alamo or the storming of Chapultepec.

If we are to appreciate just what it was that constitutes the undying merit of President Gilman's work, we must first of all re-create that time in our minds. We must go back to a time in which, leaving out exceptional cases, the goal of the American student's ambition was fully

reached when he was handed his A. B. diploma; when the lower ranks of the teaching staffs of our colleges were habitually recruited from among those who had just completed their studies in the senior class; when in almost every department of learning and science—always excepting of course cases of genius or of phenomenal industry and energy—our country was content not only to have the work of research and discovery done for us by other nations, but to lag decades behind the times even in the acquisition of the results; when, excellent as were many of our colleges in producing fine types of the "gentleman and scholar," the name university in the European sense could be applied to any of our institutions of learning only by a great stretch of courtesy. Every year a little stream of students found its way across the Atlantic, and every year a little stream of them came back from the inspiring and stimulating experiences of Germany, to diffuse a certain amount of knowledge of higher standards, and a certain amount of aspiration for higher achievement; but, though this process had been going on ever since the time when Longfellow and Bancroft were youths, the things that the German universities stood for remained, for the great majority of ardent and aspiring young American scholars, nothing more than a distant dream; while even the men who, in a foreign land, had drunk for a while at the living fountain, soon lost, under the pressure of absorbing routine duty, the taste of those refreshing waters, and were fain to be content with fulfilling the exacting functions of the college instructor. All men of light and leading in our college world felt that such acquiescence in palpable inferiority, such failure to strive for the upper heights of intellectual effort, was deplorable and discreditable; but the trammels of precedent, the absence of any appreciation of the situation, or interest in its betterment, on the part of even the educated public, seemed to make any hope of a marked advance extremely remote.

From the moment that Mr. Gilman was called to the presidency of what was to be the Johns Hopkins University, there was one idea that was absolutely central in his mind. It was not worth while to take this munificent bequest of Johns Hopkins and do with it once more what had been done so often; make one more college, or one more so-called university, to do work which could be done as well, or better, by existing institutions. The contribution of the Johns Hopkins University to the nation's intellectual resources must be in the nature not of a mere addition to quantity, but of an advance in quality. It must be given such a character as to place America on a new plane of scholarly and scientific achievement; it must undertake the task of creation and not merely that of instruction. I have said that this idea was dominant in his mind; but the thought may occur to you that the idea was a simple one, and might have been adopted by any one. What made the real distinction of Mr. Gilman was not the novelty of the idea, but the spirit that vitalized the idea and converted it into a working reality. To do this may seem now to have been easy; but to those of us who were in at the birth of this University, it was plain enough that the qualities which were necessary to the achievement, and which Mr. Gilman displayed in so remarkable a degree, were qualities that are extremely rare. Optimism is not, perhaps, a rare quality; but the kind of optimism which constantly expects success, and yet which knows that success can only come through careful planning and full calculation of opposing forces, is very rare. Courage may not be rare; but in Mr. Gilman's courage there was a certain cheerfulness and serenity that made it both enduring in himself and infectious as to others. Firmness and the power of command and discipline may not be rare; but they are not often found in connection with such quick perception of the qualities of one's co-workers as to insure harmonious and willing co-operation. All these things, and more, Mr. Gilman had; and

it was because he had them that the Johns Hopkins University, though launched in strange waters and with no assurance of a safe voyage except what lay in the head of the pilot, made straight for port from the very first. Before the event, no one could have thought it possible for a young institution to make so profound an impression on the whole intellectual life of the nation, and to attain such recognition throughout the world, as did the Johns Hopkins in the first five or six years—indeed, in the first two or three years—of its existence.

I shall not detain you to give any particulars of that early history; it is only the essential character of it that I have wished to recall to your minds. It was a time of hope and pride and enthusiasm; a time of delightful work and of that peculiarly grateful companionship which comes from the sense of being partakers in the beginnings of a new and great work, a work that is to mark an epoch. But throughout that time of enthusiasm there was a man at the head who knew how to prevent enthusiasm from running to waste; who, as has been so well said by Professor Gildersleeve, was the taskmaster of us all. Many a thing was done against the grain, not because Mr. Gilman demanded that it be done, but because, as the occasion required it, he made one and another feel that it ought to be done. And this brings me to the mention of the last of the qualities on which I shall dwell at any length. It was as essential as any of those on which his success here was based, and it was perhaps as rare as any of them. I do not refer to his extraordinary gift in the selection or in the management of men, to his untiring industry, or to his remarkable capacity for detail. What I mean is the extraordinary comprehensiveness of his active interests. Plenty of men have a curiosity to know something about science, and something about history, and something about art, and so on. And I am not affirming that President Gilman had a knowledge of a great number of subjects that was of exceptional accuracy or

exceptional profundity. What I do say is that he had a sort of sympathetic intuition for the larger aspects of any department of human effort, whether in the domain of intellect or of action, which caused him to seize with avidity on every important development and to give to it the most hearty interest, the most intelligent co-operation, the most ungrudging support. It was the genuineness of interest thus arising—an interest quite different from that of the mere administrator—that gave to his work as our "taskmaster" that quality which so peculiarly distinguished it.

I shall not attempt even to indicate the many lines of important and beneficent achievement in which Mr. Gilman did signal service; that has been done many times in the past few weeks. Nor shall I endeavor to point to less conspicuous good works, beyond saying that his ear was ever open to any appeal, not only for the betterment of the community and for the succor of the needy, but for any cause, large or small, that represented a worthy desire or aspiration. I may perhaps permit myself, in conclusion, to mention a little incident which, while at this moment it comes back to my mind and heart with peculiar force, is thoroughly characteristic of the man and throws a real light on one of the great sources of his many-sided usefulness. A number of years ago, when there seemed to be danger that the Mercantile Library would be abandoned for want of support, I expressed to Mr. Gilman my deep regret that such a thing should be possible. I said that it was a great resource for people of quiet tastes, and mentioned as an illustration that it was one of the very few places to which my mother took pleasure in going. It was several months after this talk that matters came to a head in regard to the library, and we all know that the saving of the library was chiefly due to the energetic exertions of Mr. Gilman, aided by the generosity of Mr. McCoy. It never occurred to me that what I had said to Mr. Gilman had anything to do with

the matter, or even that he remembered it at all. One day, meeting Mr. Gilman, I told him what a splendid thing I thought he had done in saving the library. "I was thinking of your mother when I was doing it," he said. Seed that was dropped in his mind fell on fruitful ground. Opportunity to do good works and the actual doing of them—so far apart, alas, for most of us—were to him the nearest possible of neighbors. And so it came about that, whatever other titles he may have to remembrance, he deserves pre-eminently that most enviable of all epitaphs, "Well done, thou good and faithful servant."

MINUTE ADOPTED BY THE CLASS OF 1889

The Class of 1889 of the Johns Hopkins University, in reunion assembled at the Hotel Stafford, in Baltimore, on November 20, 1908, desire to record herein their feeling of personal grief and loss at the departure from this earthly scene of their valued counselor and friend, Dr. Daniel Coit Gilman.

Entering the ranks of the student body as they did when the University was still comparatively young, they have watched with unabated interest through many years the rapid growth and expansion of their well-beloved Alma Mater under his skillful guidance.

And now filling honorable positions in life as ministers, physicians, teachers, lawyers, and business men, they feel that no small portion of their success has been due to the great personal interest which President Gilman took in their welfare while they were students under his guidance, as well as later when he watched their individual careers with honest pride in their achievements in the varied fields of their activity.

They miss the familiar face so well portrayed in their own class book, from the halls of that University which was so long his fondest care, and they wish herein to express formally their steadfast loyalty to the memory of him whom in life they loved to honor as their leader.

The Class of 1889,

WALDO NEWCOMER, *President.*
GEORGE C. KEIDEL,
HARRY C. JONES, } *Committee.*
LEGH W. REID,

CURRENT NOTES

The one-hundredth anniversary of the birth of Edgar Allan Poe was celebrated by the University and the Poe Memorial Association of Baltimore by public exercises in McCoy Hall, on the evening of January 19. A lecture on the life and works of the poet was delivered by Professor William P. Trent, of Columbia University. Short addresses on various phases of Poe's career were made by Reverend Oliver Huckel and Mr. John P. Poe, of Baltimore, and an original poem was read by Miss Lizette Woodworth Reese.

Mr. C. Howard Walker, of Boston, gave two lectures in McCoy Hall, January 21 and 22, on "Recent Developments of Architecture in America."

Professor A. V. Williams Jackson, of Columbia University, gave a course of lectures on the "Religion of Persia," in McCoy Hall, at 5 o'clock, January 26, 27, 28, February 2, 3, 4. This course is one of the annual series arranged by the American Committee for Lectures on the History of Religions.

Dr. Fabian Franklin, of Baltimore, will give twelve public lectures on "The Central Doctrines of Political Economy," in McCoy Hall, at 5 o'clock. The dates and topics are as follows: February 10, "The Method and Spirit of Political Economy"; February 12, "The Idea of the Margin in Political Economy; the Theory of Value"; February 17, "The Law of Diminishing Productiveness and the Doctrine of Rent"; February 19, "The Principle of Population; Malthus and his Critics; Past and Future"; February 24, "Savings and Interest; Labor and Wages; Enterprise and Profit"; February 26, "The Teachings of Henry George"; March 17, "Money"; March 19, "Foreign Trade; the 'Balance of Trade'; Free Trade and Protection"; March 24, "Monopoly"; March 26, "Some Ethical Questions"; March 30, "Specimen Fallacies"; March 31, "A Retrospect."

The Percy Turnbull Memorial lectures will be given this year by Professor Ramón Menéndez Pidal, of the University of Madrid. They will be delivered *in French*. The general subject will be "L'épopée castillane à travers la littérature espagnole." The special topics and dates are as follows: March 5, "Les origines de l'épopée"; March 8, "Castille et Léon"; March 9, "Le poème du Cid"; March 11, "Le Cid et Chimène"; March 12, "Le romancero"; March 15, "Le théâtre des XVI et XVII siècles"; March 16, "La matière épique dans la poésie moderne."

PROCEEDINGS OF SOCIETIES

Scientific Association

December 2, 1908.—Modern Methods in Geophysical Research. A. L. DAY.

January 13, 1909.—Genetic Science. J. M. BALDWIN.

Electrical Operation of Steam Railways. J. B. WHITEHEAD.

February 3, 1909.—The Grafting of Epithelial and other Tissues of the Body. W. S. HALSTED.

Recent Views concerning the *Aurora Borealis*. J. A. ANDERSON.

Philological Association

December 18, 1908.—Two hundred and fiftieth regular meeting. Professor GILDERSLEEVE in the chair. Attendance, 65.

A Retrospect of the Work of the Association. B. L. GILDERSLEEVE.

A Brief Review of the History of the Association. E. H. SPIEKER.

January 15, 1909.—Two hundred and fifty-first regular meeting. Professor GILDERSLEEVE in the chair. Attendance, 30.

Ancient Egyptian Temple Ceremonial. C. JOHNSTON.

On the Origin of the Construction, "Er hat schreiben können." W. KURRELMEYER.

Historical and Political Science Association

December 18, 1908.—Parliaments in the 13th and 14th Centuries. Professor E. P. CHEYNEY.

Howe's Life and Letters of George Bancroft. C. P. GOULD.

Lownhaupt's Investment Bonds: Their Issue and Place in Finance. E. R. SPEDDEN.

Cooke's The Commerce Clause of the Federal Constitution. K. SINGEWALD.

January 15, 1909.—The Making of Economic Literature. Professor S. N. PATTEN.

Beer's Origins of the British Colonial System. E. R. TURNER.

Daggett's Railroad Reorganization. F. T. STOCKTON.

Taylor's The Science of Jurisprudence. W. F. DODD.